



# Braidwood and Byron Core Monitoring and Support System

January 8, 2024

# Agenda

- Purpose and Background
- LAR Scope
- Reason for the Change
- Key Milestones
- References

## Purpose and Background

- On February 13, 2001, Byron and Braidwood received NRC approval of license amendment (Reference 1) allowing for the relaxation of several Technical Specifications when the Best Estimate Analyzer for Core Operations Nuclear (BEACON) power distribution monitoring system (PDMS) is Operable.
- PDMS is a component within Westinghouse's BEACON Core Monitoring System which allows for the relaxation of several Technical Specifications.
- Currently, the Byron and Braidwood Technical Specifications are written such that Limiting Conditions for Operations (LCOs) can be completed satisfactory in the event PDMS becomes INOPERABLE.

# License Amendment Request Scope

- Constellation proposes to remove the current PDMS relaxations from Byron and Braidwood Technical Specifications, reverting to its previous licensing bases which aligns with industry Standard Technical Specifications (STS), NUREG 1431 Revision 1.
- This proposal would revert changes made to incorporate PDMS that was issued on 13 February 2001.
  - TS 3.2.3 – Axial Flux Difference (AFD) was revised and approved for both Braidwood and Byron stations in 2018 (Reference 2) to remove any association with PDMS. Therefore, the proposed changes as part of this upcoming request will not include a revision to TS 3.2.3.

## License Amendment Request Scope (continued)

- Technical Specification Sections impacted:

TS Section	Notes
3.1.4 – Rod Group Alignment Limits	Remove references to inoperable PMDS and restore action to perform Surveillance Requirements (SRs).
3.1.7 – Rod Position Indication	Clarify Required Actions (RAs) to verify position of the rods with inoperable Digital Rod Position Indications (DRPIs) indirectly. Completion Time (CT) of 4 hours added.
3.2.1 – Heat Flux Hot Channel Factor	Set RAs, CT, and SRs to ensure compliance and monitoring to $F_Q(Z)$ limit. Remove references to PDMS (to align with STS 3.2.1B from NUREG 1431).
3.2.2 – Nuclear Enthalpy Rise Hot Channel Factor	State specific SR for $F^N\Delta H$ (SR 3.2.2.1) and remove references to PDMS.
3.2.4 – Quadrant Power Tilt Ratio (QPTR)	Remove reference for inoperable PDMS as QPTR TS ensures QPTR limit is met so the gross radial power distribution remains consistent with Safety Analysis.
3.2.5 – Departure from Nucleate Boiling Ratio (DNBR)	Delete from TS
3.3.1 – Reactor Trip System (RTS)	Restore Condition D to TS LCO which involves One Power Range Neutron Flux-High Channel inoperable. Ensure that under specific unit status of TS applicability that all instrumentation performing a RTS function is operable.
5.6.5 – Core Operating Limits Report (COLR)	Remove text “LCO 3.2.5, “Departure from Nucleate Boiling Ratio (DNBR)” from 5.6.5.a list

## Reason for the change

- Standard Technical Specifications (STS) for Westinghouse Plants (NUREG-1431) are agnostic to the specific core monitoring system software used to satisfy LCOs and Surveillance Requirements (SRs).
- Byron and Braidwood are currently outliers in the U.S. PWR fleet by referencing a specific core monitoring system (i.e., PDMS) in Technical Specifications.
- Constellation desires to align Byron and Braidwood closer to industry STS to position itself for future projects.

## Key Milestones

- Pre-Submittal Meeting – 08 January 2024
- Expected Submittal Date – 29 March 2024
- Requested Approval Date – 30 April 2025

## References

1. “Byron Station, Units 1 and 2, and Braidwood Station, Units 1 and 2 – Issuance of Amendments to Technical Specifications for Implementation of the Best Estimate Analyzer for Core Operations Nuclear Power Distribution Monitoring System (TAC Nos. MA8254, MA8255, MA8252, and MA8253),” February 13, 2001
2. “Braidwood Station, Units 1 and 2, and Byron Station, Unit Nos. 1 and 2 – Issuance of Amendments Regarding Axial Flux Difference Technical Specifications (EPID L-2018-LLA-0098),” December 12, 2018



# Questions

